

What is Claimed is:

## 1. A circuit breaker comprising:

a housing;

at least one set of separable contacts including a set of main contacts;

an operating mechanism including an operator handle for opening and closing said set of main contacts, said operator handle having a surface, an ON position, a tripped position, and an OFF position, said main contacts being closed in said ON position, being open in said tripped position, and being open in said OFF position;

a trip mechanism releasing said operating mechanism to move said operator handle to said tripped position; and

a switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the operator handle of said operating mechanism, said switch also including a contact having a first state corresponding to said actuated position and a second state corresponding to said non-actuated position, the surface of said operator handle engaging and moving said actuator lever to said actuated position in only the ON position of said operator handle, said actuator lever being in said non-actuated position in the OFF position and the tripped position of said operator handle.

2. The circuit breaker of Claim 1 wherein said housing includes a base portion and a cover portion; and wherein said switch is a micro-switch having a first side, which engages said base portion, and an opposite second side, which engages said cover portion.

3. The circuit breaker of Claim 2 wherein said base portion includes a first surface, which engages the first side of said micro-switch, and a second surface, which is normal to said first surface; and wherein said micro-switch further has a third side, which is normal to said first and second sides, the third side of said micro-switch engaging the second surface of said base portion.

4. The circuit breaker of Claim 3 wherein said base portion has an opening; and wherein said micro-switch has an opening extending from the first side to the second side thereof, said micro-switch also having a pin which engages said

micro-switch within the opening thereof and engages said base portion within the opening thereof.

5. The circuit breaker of Claim 1 wherein said operator handle engages said actuator lever, which remains in said non-actuated position, in the tripped position of said operator handle.

6. The circuit breaker of Claim 1 wherein the surface of said operator handle disengages from said actuator lever in the OFF position of said operator handle.

7. The circuit breaker of Claim 1 wherein said at least one set of separable contacts includes said set of main contacts and a set of secondary contacts electrically connected in series with said set of main contacts; and wherein said operating mechanism includes a solenoid moving said set of secondary contacts between closed and open positions, and a control circuit selectively energizing said solenoid.

8. The circuit breaker of Claim 7 wherein said switch is a first switch; and wherein said control circuit includes a second switch having a first contact controlling said solenoid, and a second contact electrically connected in series with said contact of said first switch.

9. The circuit breaker of Claim 8 wherein the contact of said first switch is a normally open contact, with the first state of said normally open contact being closed when said first switch is actuated and said set of main contacts is closed; wherein the second contact of said second switch is closed when said solenoid moves said set of secondary contacts to the closed position thereof; wherein said control circuit is adapted to receive a voltage and apply the same to the second contact of said second switch; and wherein the contact of said first switch is adapted to output said voltage when said set of main contacts and said set of secondary contacts are both closed.

10. The circuit breaker of Claim 7 wherein said switch is a first switch; and wherein said control circuit includes a second switch having a first contact controlling said solenoid and a second contact electrically connected to the contact of said first switch; wherein the second contact of said second switch and the contact of said first switch are adapted to receive a voltage; wherein the second

contact of said second switch has an output adapted to provide a feedback voltage external to said housing when said set of secondary contacts is closed; and wherein the contact of said first switch has an output adapted to provide a feedback voltage external to said housing when said set of main contacts is closed.

11. The circuit breaker of Claim 7 wherein said switch is a first switch; wherein said control circuit includes a contact electrically connected in series with the contact of said first switch, a first node electrically connected to the contact of said first switch and to the contact of said control circuit, a second node, a first circuit element electrically connected between the contact of said first switch and said second node, and a second circuit element electrically connected between the contact of said control circuit and said second node.

12. The circuit breaker of Claim 11 wherein said first circuit element is a first resistor having a first resistance value; and wherein said second circuit element is a second resistor having a different second resistance value.

13. The circuit breaker of Claim 12 wherein the second resistance value is about two times the first resistance value.

14. The circuit breaker of Claim 1 wherein said at least one set of separable contacts is said set of main contacts; and wherein the contact of said switch has an input adapted to receive a voltage and an output adapted to provide a feedback voltage external to said housing when said set of main contacts is closed.

15. A circuit breaker comprising:

separable contacts;

an operating mechanism including a movable contact arm for opening and closing said separable contacts, said movable contact arm having a surface, an ON position, a tripped position, and an OFF position, said separable contacts being closed in said ON position, being open in said tripped position, and being open in said OFF position;

a trip mechanism releasing said operating mechanism to move said movable contact arm to said tripped position; and

a switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the movable contact arm of said operating mechanism, said switch also including a

contact having a first state corresponding to said actuated position and a second state corresponding to said non-actuated position, the surface of said movable contact arm engaging and moving said actuator lever to said actuated position in the tripped position and the OFF position of said movable contact arm, said actuator lever being in said non-actuated position in the ON position of said movable contact arm.

16. The circuit breaker of Claim 15 wherein the surface of said movable contact arm engages said actuator lever, which remains in said non-actuated position, in the ON position of said movable contact arm.

17. The circuit breaker of Claim 15 wherein said separable contacts include a fixed contact and a movable contact; wherein said movable contact arm is electrically connected to the movable contact; wherein said actuator lever includes an insulator; and wherein the surface of said movable contact arm engages the insulator of said actuator lever.

18. A circuit breaker comprising:

a molded housing having a base portion and a cover portion;

separable contacts;

an operating mechanism including an operator handle for opening and closing said separable contacts, said operator handle having a surface, an ON position, a tripped position, and an OFF position, said separable contacts being closed in said ON position, being open in said tripped position, and being open in said OFF position;

a trip mechanism releasing said operating mechanism to move said operator handle to said tripped position; and

a micro-switch including an actuator lever movable between an actuated position and a non-actuated position and adapted to engage the surface of the operator handle of said operating mechanism, said switch also including a contact having a first state corresponding to said actuated position and a second state corresponding to said non-actuated position, the surface of said operator handle engaging and moving said actuator lever to said actuated position in the ON position of said operator handle, said actuator lever being in said non-actuated position in the OFF position and the tripped position of said operator handle, said micro-switch

having a first side, which engages the base portion of said molded housing, and an opposite second side, which engages said cover portion of said molded housing.

19. The circuit breaker of Claim 18 wherein the base portion and the cover portion of said molded housing define a compartment, which houses said separable contacts, said operating mechanism, said trip mechanism and said micro-switch.

20. The circuit breaker of Claim 18 wherein the contact of said micro-switch has an input adapted to receive a voltage and an output adapted to provide a feedback voltage external to said housing when said separable contacts are closed.

21. A circuit breaker comprising:

separable contacts;

an operating mechanism including an operator handle for opening and closing said separable contacts, said operator handle having a surface, an ON position, a tripped position, and an OFF position, said separable contacts being closed in said ON position, being open in said tripped position, and being open in said OFF position;

a trip mechanism releasing said operating mechanism to move said operator handle to said tripped position;

a micro-switch including a first side, an opposite second side, and an actuator lever movable between an actuated position and a non-actuated position and adapted to be actuated by the surface of the operator handle of said operating mechanism, said switch also including a contact having a first state corresponding to said actuated position and a second state corresponding to said non-actuated position, said contact having one of the first and second states in the ON position of said operator handle, and having the other of the first and second states in the OFF position and the tripped position of said operator handle; and

a molded housing having a base portion, which engages the first side of said micro-switch, and a cover portion, which engages the second side of said micro-switch, the base portion and the cover portion of said molded housing defining a single compartment, which houses said separable contacts, said operating mechanism, said trip mechanism and said micro-switch.